



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

July 6, 2012

4SD-SSB-TSS

MEMORANDUM

SUBJECT: Review of ecological aspects of the Supplemental Sampling Work Plan for Soil/Sediment Sampling and Groundwater Data Collection Operable Unit 2, McIntosh, Alabama

FROM: Sharon R. Thoms, Life Scientist *SNT*
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THRU: Glenn Adams, Chief *GA*
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TO: Beth Walden, Project Manager
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Per your request on June 14, I have reviewed the Supplemental Sampling Work Plan for Soil/Sediment Sampling and Groundwater Data Collection Operable Unit 2, McIntosh, Alabama. The work plan was dated June 14, 2012.

The work plan was confusing because it contained groundwater sampling designed to determine how much groundwater might be upwelling into the Olin Basin. The work plan, however, indicated that the subordinate data quality objectives related to the groundwater upwelling and the sediment partitioning will be addressed separately from this work plan. I did not review the work plan for the adequacy of the groundwater data collection to address potential groundwater upwelling in the Olin Basin. My review focused on the proposed supplemental sampling of sediments in the wastewater ditch and the sampling soils of the floodplain for 2,4'-

and 4,4'-isomers of dichlorodiphenyltrichloroethane (DDT), dichlorodiphenyldichloroethylene (DDE), and dichlorodiphenyldichloroethane (DDD) (collectively, DDTR).

COMMENTS FOR THE PREPARER:

The purpose of the work plan was to address the following questions presented in the data quality objectives (DQO) table in Appendix A of the work plan:

- a. What are the current mercury and hexachlorobeneze (HCB) concentrations of sediment in the wastewater and former discharge ditch?
- b. Is water in the wastewater ditch in OU-2 interconnected with groundwater?
- c. What are the current concentrations of DDTR in floodplain surface soil northwest of the Basin and southwest of Round Pond?

The comments are organized by objective. The objectives for additional data collection were discussed at a January 2012 meeting between Olin, EPA, and the Alabama Department of Environmental Management. Three additional objectives were discussed, which are included in Appendix A. However, this work plan covers only the above three objectives. The remaining objectives pertain to groundwater upwelling into the Olin Basin and the partition coefficients to native clays and various cap materials. The additional three objectives will be addressed separate from this work plan. Groundwater data collection is included in this work plan that it is not part of the objective related to groundwater interconnection with the ditch. Text should be revised to explain why the groundwater data for the Olin Basin is being collected if not related to the objectives of the work plan. Groundwater collection to address potential groundwater upwelling into the Olin Basin should be described in a separate work plan.

COMMENTS ON WASTEWATER DITCH SAMPLING:

1. *Section 2.1.1, Wastewater and Former Discharge Ditch Sampling, Sediment Sampling, Page 2-1.* Appendix A indicated that sediment sampling of the wastewater ditch and former discharge ditch would be of the top 0-6 inches. Section 2.1.1, however, indicated that the sampling would be of the top 0-4 inches. The sampling of the wastewater ditch and former discharge ditch sediments is recommended to be of the top 0-6 inches to be consistent with previous sampling events.
2. *Section 2.1.1, Wastewater and Former Discharge Ditch Sampling, Sediment Sampling, Pages 2-1 through 2-2.* The number of samples and spacing of samples is adequate. Table 2-1 indicated that all of the samples would be analyzed for total mercury, total organic carbon, percent moisture, and hexachlorobenzene (HCB). Appendix A, however, indicated that select samples would be analyzed for total mercury. This discrepancy should be corrected. Mercury concentrations in the wastewater ditch and former discharge ditch may be relatively high at the upstream end of the wastewater ditch, the bend in the wastewater ditch and in the former discharge ditch, based on past sampling. Clarification should be provided in the text and table as to whether all of the sediment samples will be analyzed for total mercury.

3. *Section 2.1.1, Wastewater and Former Discharge Ditch Sampling, Sediment Sampling, Pages 2-1 through 2-2.* The locations for the sediment samples in the wastewater ditch and former discharge ditch should target the likely worst case concentrations. Grain size data is recommended in conjunction with sediment samples of the ditch to verify that erosional/depositional areas were captured. The HCB may be present as larger particles, since it was deposited as a solid material. Please discuss the optimal strategy for collecting the sediment samples for HCB, given its physical properties and fate and transport properties.

COMMENTS ON GROUNDWATER CONNECTION TO WASTEWATER DITCH:

4. *Section 2.1.2, Topographic Survey and Groundwater Level Measurement, Page 2-2.* The text indicated that a topographic survey would be conducted to measure the surface water elevation of the ditches. The idea is to measure the surface water elevation in the wastewater ditches relative to the groundwater elevation in piezometers or monitoring wells located nearby. The work plan should specify where surface water elevations will be measured. Please adapt Figure 2-1 to show measurement locations. The surface water elevations in the ditch should be measured at locations near the groundwater monitoring wells along the ditch. A table should be added listing the groundwater monitoring wells that are part of the investigation of groundwater elevations. Ideally staff gauges should be surveyed in place to facilitate future ditch surface water elevation measurements at the same locations used in this study. Surface water elevation measurements may be required in the future if this study is inconclusive or if seasonal differences are of interest.
5. *Section 2.1.2, Topographic Survey and Groundwater Level Measurement, Page 2-2.* Large sections of the wastewater ditch lack nearby groundwater monitoring wells. Please discuss the degree to which this study will answer the groundwater question and whether temporary wells are needed to fill any data gaps.
6. *Section 2.1.2, Topographic Survey and Groundwater Level Measurement, Page 2-2.* Figure 1-1 should be revised to show the tributaries entering the Wastewater Ditch from the site. Groundwater could potentially interact with the ditch through its tributaries. The survey should include the tributaries.

FLOODPLAIN SOIL SAMPLING FOR DDTR NEAR ROUND POND:

7. *Section 2.2, Floodplain Soil Sampling, Page 2-2.* Please change the year 1900 to 1990 in line 5.
8. *Section 2.2, Floodplain Soil Sampling, Page 2-2.* Please clarify that 2,4'- and 4,4'-isomers of dichlorodiphenyltrichloroethane (DDT), dichlorodiphenyldichloroethylene (DDE), and dichlorodiphenyldichloroethane (DDD) will be measured separately and added together to obtain an estimate of DDTR concentrations in soil.

If you have any questions, please contact me at 2-8666.